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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,149	09/24/2003	Joseph Phillip Bigus	YOR920030271US1	7384

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EXAMINER
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TRAN, MAI T

ART UNIT	PAPER NUMBER
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2129

DATE MAILED: 11/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/670,149

Applicant(s)

BIGUS ET AL.

Examiner

Mai T. Tran

Art Unit

2129

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 7-13, 15-21 and 23-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-13, 15-21 and 23-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### **REMARKS**

Applicants' amendment dated September 14, 2006 responding to the June 14, 2006 Office Action provided in the rejection of claims 1-24, wherein claims 1, 4, 7, 9, and 17 have been amended. Claims 6, 14, and 22 have been canceled. Claims 25-27 are newly added. Claims 1-5, 7-13, 15-21, and 23-27 remain pending in the application and which have been fully considered by the examiner.

The Examiner withdraws the rejection to claim 1-24 under 35 USC § 112, the rejection to claims 1-24 under 35 USC § 101 corresponding to Applicants' amendment.

### **CLAIM REJECTIONS - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims **1-24** are rejected under 35 U.S.C. 102(b) as being anticipated by Arnold et al, U.S. Patent No. 5,822,301, hereafter Arnold.

#### **Claim 1**

Arnold teaches a computer-implemented method of determining a health of a computing system component, the computer-implemented method comprising:

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generating at least one fuzzy data set associated with at least one measured metric of the computing system component, wherein the fuzzy data set defines fuzzy regions indicating different categories of the measured metric (*col. 3, lines 22-46*);

generating at least one fuzzy rule set associated with the at least one measure metric, wherein the fuzzy rule set defines a relationship of the fuzzy regions of the fuzzy data set to categories of computing system component health (*col. 3, lines 22-46*); and

outputting the health of the computing system component based on the at least one fuzzy data set and the at least one fuzzy rule set (*col. 4, lines 8-14, specifically lines 11-12 where it stated "a reliable statement about the respective condition of the network", col. 8, lines 8-17*).

#### **Claim 2**

Arnold teaches the method of claim 1, wherein the at least one fuzzy data set is generated by performing data mining on metric history data, wherein the metric history data includes measured values for the at least one measure metric for a predetermined period of time (*col. 4, lines 23-53*).

#### **Claim 3**

Arnold teaches the method of claim 2, wherein the data mining includes performing statistical analysis of the metric history data to determined the distribution of the metric history data (*col. 2, lines 36-46*).

#### **Claim 4**

Arnold teaches the method of claim 1, further comprising:

generating at least one second fuzzy rule set indicating a relationship of the health of the computing system component to the health of at least one other computing system component (col. 4, lines 22-44) .

**Claim 5**

Arnold teaches the method of claim 1, further comprising:

generating an indicator of the health of the at least one computing system component (col.8, lines 8-17); and

outputting the indicator (col. 8, lines 8-17).

**Claim 7**

Arnold teaches the method of claim 1, wherein determining the health of the computing system component based on the at least one fuzzy data set and the at least one fuzzy rule set includes:

applying the at least one fuzzy rule set to metric data collected by a metric data collection facility (col. 3, lines 22-46); and

determining a fuzzy data set in which the metric data is classified based on an application of the at least one fuzzy rule set (col. 3, lines 22-46).

**Claim 8**

Arnold teaches the method of claim 7, wherein the at least one fuzzy rule set includes at least one hedge and wherein determining a fuzzy data set in which the metric data is classified includes applying at least one hedge algorithm associated with the at least one hedge to metric data (col. 9, lines 49-56).

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Claims 9-13 and 15-16, this is a software version of the claimed method discussed above, in claims 1-5 and 7-8, wherein all claimed limitations have also been addressed and cited as set forth above.

Claims 17-21 and 23-24, this is an apparatus version of the claimed method discussed above, in claims 1-5 and 7-8, wherein all claimed limitations have also been addressed and cited as set forth above.

### CLAIM REJECTIONS - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims **25-27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnold as applied to claims 1-5 and 7-8, claims 9-13 and 15-16, claims 17-21 and 23-24 above, and further in view of “Applying Neural Networks to Computer System Performance Tuning” by Joseph P. Bigus, hereinafter Bigus.

Arnold teaches a method of determining a health of a computing system component but fails to disclose at least one measured metric is selected from the group consisting of processor utilization, page fault rates, number of threads, number of hits on a website, number of database queries, number of database connections, and combinations thereof.

Bigus teaches computer system performance tuning using key system performance measures such as device utilizations and paging rates (Bigus, abstract).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to combine the method of determining a health of a computing system component of Arnold with the key system performance measures of Bigus. The motivation for doing so would be to maximize system efficiency (Bigus, page 2442, left column, line 20).

## **RESPONSE TO ARGUMENTS**

### **1. Rejection of claims 1-57 under 35 U.S.C. § 102(b):**

### Argument 1

Arnold does not anticipate claim 1 as amended because Arnold does not teach all of the features of claim 1 as amended ... Neither this portion of Arnold nor any other portion of Arnold teaches or suggests the feature of “determining the health of the computer system component based on the at least one fuzzy data set and the at least one fuzzy rule set,” as recited in claim 1. Instead, the cited portion of Arnold teaches that communication connections can be evaluated using fuzzy rule sets. However, this teaching of Arnold differs from the claimed step of “determining the health of the computing system component based on the at least one fuzzy data set and the at least one fuzzy rule set,” because this claimed step determines the health of a computing system component. In Arnold, the fuzzy logic is used to evaluate different communication connections. However, a communication connection, as in Arnold is not the same as a computing system, as claimed. Likewise, the health of a computing system, as claimed, is not the same as evaluating the quality of a communications connection, as in Arnold. The Examiner has the burden of proving otherwise.

First, in response to applicants’ argument that the references fail to show certain features of applicants’ invention, it is noted that the features upon which applicant relies (i.e., “*determining the health of the computer system component based on the at least one fuzzy data set and the at least one fuzzy rule set*”) are not recited in the amended claims.

Second, in response to applicants’ argument that “*a communication connection, as in Arnold is not the same as a computing system, as claimed.*” Applicants are reminded that during patent examination, the claims are given the broadest reasonable interpretation consistent with the specification. See *In re Morris*, 127 F.3d 1048, 44 USPQ2d 1023 (Fed. Cir. 1997). Applicants correctly stated Arnold teaches the communication connections can be evaluated using fuzzy rule sets. Examiner asserts the communication connections in communication network of Arnold to read on a computing system component as claimed since the communication networks are complex systems that contain several thousand components i.e. computing system component.



Third, in response to applicants' argument that "the health of a computing system", as claimed, is not the same as evaluating the quality of a communications connection, as in Arnold. Arnold teaches in col. 4, lines 8-14, specifically lines 11-12 where it stated "a reliable statement about the respective condition of the network" to read on "the health of a computing system."

### CONCLUSION

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### CORRESPONDENCE INFORMATION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mai T. Tran whose telephone number is (571) 272-4238. The examiner can normally be reached on M-F 9:00am-- 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Vincent can be reached on 571-272-3080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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